

REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

Objection to the specification

The Office Action objected to the specification. Applicants submit herewith amendments to the specification, which rectifies all those spelling and grammatical errors mentioned by the Examiner. Thus, it is respectfully requested that the objection to the specification be withdrawn.

Rejection of claims 1, 2, 4-11, 13-15 under 35 U.S.C. 103(a) as being unpatentable over Hall et al.(WO 99/12638) in view of Janata et al.(US 5,778,664)

Applicants acknowledge with appreciation the indication that claims 3 and 12 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have therefore made an appropriate amendment to the claims.

Applicants have rewritten claim 1 to include all of the limitations of claim 3; canceled claim 3; and rewritten claim 12 to include all of the limitations of claims 1 and 6.

Claims 2, 4-11 and 13-15 are allowable since they are indirectly or directly dependent upon one of the amended claims 1 or 12 which is allowable. Accordingly, it is most respectfully requested that this rejection be withdrawn.

New claims

The invention as defined in new claim 28 is directed to a purification system of exhaust gases in an internal combustion engine for purifying the exhaust gases by disposing a reaction furnace in an exhaust pipe of the internal combustion engine. The system is comprised of a reactor including a honeycomb carrier and a plasma generating means. The honeycomb carrier has a plurality of carrier cells, on which a photocatalyst layer is coated, the photocatalyst layer coated on the honeycomb inducing plasma generation within the honeycomb carrier.

According to the purification system of the present invention, plasma can be obtained, which is sufficient for activating the photocatalyst with a small amount of energy at a pressure higher than the atmospheric pressure. This is possible because photocatalysis at the surface of honeycomb monolith substrate helps generated plasma penetrate into the axial direction of narrow and long honeycomb cell paths with much less electrical energy consumption.

Hall et al. disclose that the gas permeable bed may have a mixed structure and a honeycomb section can be one section of the mixed structure. Further, Janata et al. discloses the fact that a photocatalyst layer can be used in the form of a coating. However, none of the prior art references teach or suggest the above positively recited feature of the present invention, that is, the photocatalyst layer coated on the honeycomb induces plasma generation within the honeycomb carrier, thereby obtaining plasma sufficient for activating the photocatalyst with a small amount of energy at a pressure higher than the atmospheric pressure.

Therefore, since the prior art references lack at least the above recited

features of new claim 28, and since there is no possible motivation to include the features, it is respectfully submitted that the cited references could have not suggested the claimed invention.

Claims 29-37 are allowable for at least the same reasons as independent claim 28 on which they depend, as well as for their own features which are not taught or suggested by the cited references. Thus, allowance of claims 29-37 is respectfully requested.

CONCLUSION

Applicant believes that this is a full and complete response to the Office Action. For the reasons discussed above, applicant now respectfully submits that all of the pending claims are in condition for allowance. Accordingly, it is respectfully requested that the Examiner's rejections be withdrawn; and that claims 1, 2, 4-15 and 28-37 be allowed in their present form.


Should the Examiner require or consider it advisable that the specification, claims an/or drawings be amended or corrected in formal respects, in order to place the case in condition for final allowance, then it is respectfully requested that such amendment or correction be carried out by Examiner's Amendment and the case be passed to issue.

Based on the foregoing amendments and remarks, it is respectfully submitted that the claims in the present application, as they now stand, patentably distinguish over the references cited and applied by the Examiner and are, therefore, in condition for allowance. A Notice of Allowance is in order, and such favorable action and reconsideration are respectfully requested.

However, if after reviewing the above amendments and remarks, the Examiner has any questions or comments, he is cordially invited to contact the undersigned attorneys.

Respectfully submitted

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Date: December 8, 2005
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